ABSTRACT

TITLE:	A Geospatial Analysis of the California Drought: Hetch Hetchy Reservoir, Trinity Lake, and Shasta Lake
AUTHOR(S):	Henderson, Hamish
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ABSTRACT: The state of California is currently in a drought and has been since 2011. With less precipitation falling and temperatures rising, farmers have had to use an increasing amount of water to keep their crops sufficiently hydrated which in turn has contributed to a drop in water levels (Richman 2015). This research project looks at three different reservoirs that are all important for supplying water for either agricultural, industrial, or domestic usages throughout the state. Hetch Hetchy Reservoir supplies water for the city and county of San Francisco while Shasta Lake and Lake Trinity both are the major water supplies for the Central Valley Project. The Central Valley Project helps supply water and power for the entire state and is the main irrigation water provider for agriculture in the Central Valley (U.S. Bureau of Reclamation, 2013). Landsat satellite imagery has been geospatially manipulated to determine how the three reservoirs surface areas have changed throughout a 20 year period, 1995 - 2015. The general results concluded that the water level have been steadily dropping and that since the drought started the water levels have dropped significantly. Hetch Hetchy's result were interesting as its surface area has not dropped nearly as much as the other two reservoirs. Prediction were then calculated and if current drought conditions continue these reservoirs could run dry in only a few years. It is unlikely that the reservoirs will fully dry up but it does put pressure on California to change and adapt to it new future climate. Whether this will be through genetically modifying crops to become drought resistant or having an increase in desalination plants to harvest water from its coast, if something does not change, California is in for a shaky and dry future.